

REMARKS

Claims 1-27 and 30-31 were in issue. By this amendment, claims 1-4, 7-11, 13-15, 19-24, 27, and 30 have been amended. Accordingly, claims 1-27 and 30-31 are presented and at issue. No new matter has been added. By this amendment, claims 1-27 and 30-31 are believed to be in condition for allowance.

The Invention

The invention comprises a computer file control system, with a suitable user interface, which allows a user to define category descriptions for files stored in a computer system. A user can edit such category descriptions as they are used, designate all applicable category descriptions for each file, and link category descriptions in user-definable ways. The invention further allows a user to be reminded of linked category descriptions. Category descriptions are descriptive names defined by a user (see p. 10, l. 11). Category descriptions must be defined before associating them with a file (p. 19, ll. 25-26), meaning that they are "pre-defined". (Note that the claims have been clarified by removing the term "pre-defined", since it was somewhat circular to recite, as in claim 1, "defining ... at least one list of at least one pre-defined category description" when step (a) relates to the creation of the pre-defined category descriptions).

Unlike prior art hierarchical filing systems, the present invention does not require the 2-part hierarchical relationship between fields or attributes, and associated values for such fields or attributes. At the most basic level, the present invention is a non-hierarchical filing system that allows essentially "free-form" association of category descriptions to files without regard to rigid definitions of distinct fields containing values (note that, at a next level of organization above this basic level, some hierarchical relationships are contemplated by the present invention by using category descriptions to categorize a lower level of category descriptions; see, e.g., p. 19, ll. 8-22).

In the process of search and retrieval, the invention overcomes the problem of search filter definition by insuring that the user defines a filter which will always find at least one file, thus avoiding wasting time in searching for data that cannot be matched. This is achieved in 3 ways. First, the user is not required to type the key words to search. Instead, the user simply chooses the words from pick lists, making mistyping impossible. Second, the keywords presented are only those predefined in the system and associated with at least one file. Third, as the user builds the search filter definition, categories which find no data are automatically excluded as pick list possibilities.

More particularly, the invention allows users to define an unlimited number of their own "hybrid folders" by simply describing, using category descriptions the user defines, the file contents of those files which are to belong to each "hybrid folder". These definitions are dynamic (that is, changeable by the user from time to time), and may be either totally unrestricted or restricted to a particular directory or sub-directory, as the user chooses. Such hybrid folders can be implemented on top of, and used in addition to, a conventional hierarchical directory structure, or they may replace such conventional structures entirely.

Importantly, the invention constrains a user to first define category descriptions, and then associate one or more defined category descriptions with a file. This constraint ensures that the system always "knows" the set of possible descriptors before a file is linked to them. This constraint also means that the retrieval system always "knows" the set of possible descriptors before a search filter can be defined. Therefore, a search filter can never be defined to contain descriptors that do not already exist in the indexing system.

Section 102 Rejection

In the Office Action dated 8-3-94 in connection with the parent to the above-identified application, the Examiner rejected claims 1-4, and 27-29, under §102 as being anticipated by the references to Schwartz, Cochran, or by the "Thought Pattern Handbook". Applicants respectfully traverse this rejection with respect to the claims as amended.

The Schwartz Reference

The reference to Schwartz teaches a data file management machine that enables a user to characterize stored data files according to user-defined "file attributes" (which are the same as conventional fields). Each file attribute is a variable having a user-defined name such as "author" or "subject matter". A user may assign a value to the file attribute for each file. The values that may be assigned to a file attribute may comprise user-defined character strings, such as "Smith" or "pump specification", or may be an integer. The machine stores data representing file attributes and their values in a set of "node records", each node record comprising a collection of data associated with the file.

Thus, Schwartz is simply a variation of conventional hierarchical file systems, in which fields/attributes are defined in a first step, and values associated with data files are entered into such fields/attributes in a second step. Importantly, there is also a "hierarchical" relationship between values and fields. That is, each value MUST correspond to an associated field type. Unless special filters are used on input, the hierarchical relationship between fields and values means that the system does not impose any constraints on the range

of values that may be assigned to an associated field. That is, a value can be entered in a field of which the system has no prior "knowledge".

For example, under Schwartz, one field may be "Language". Values corresponding to this field may be "English" and "French". A node record might look like this:

Field = "Language"

Record #1	FileID #1	{Location}	English	[other values ...]
Record #2	FileID #2	{Location}	French	[other values ...]

Note that the Field description is not part of the record. Thus, a search cannot be done on "Language" as a search term. Moreover, a field is a rather broad abstraction that is not particularly descriptive of the characteristics of a file. Further, the "hierarchical" relationship between field values and fields/attributes means that the term "French" MUST refer to language, and not to any other characteristic of the file (such as food type, culture, travel, etc.) That is, the values associated with each field have a pre-defined relationship to each other -- they must all be of the same type as the field.

In contrast, the present invention allows a term like "French" to be defined as a category description, and then that category description can be directly associated with any file to mean anything that makes sense to the user. For example, an entry in the File Information Directory ("FID") structure of the present invention might be:

Category Descriptions

FileID #1	{Location}	English, Language, Letter, [N other values ...]
FileID #2	{Location}	French, Bread, [M other values ...]

The invention is essentially "fieldless". category descriptions are not fields; they are directly applied descriptors of files. The number of category descriptions that can be associated with a file can vary from file to file. No pre-existing or pre-defined hierarchical relationship must exist between category descriptions and the list of category descriptions, or between each other. This distinction has been clarified in the claims as amended by the addition of the following language in all of the claims:

"each category description comprising a descriptive name, the category descriptions having no predefined hierarchical relationships with such list or each other".

An advantage of the present system is that each category description must be defined before it can be associated with a file, so that a user cannot select a category description at will. By not restricting a user to selecting defined category descriptions, as presently claimed, Schwartz allows creation of one of the problems the present invention solves -- that is, proliferation of different descriptors for similar files.

Thus, the invention as presently claimed differs from Schwartz in that a defined list of category descriptions, defined as having "no predefined hierarchical relationships with such list or each other", must exist in the computer system before accepting user input associating with the file at least one category description selected from the list of category descriptions. Schwartz fails to teach or suggest this concept.

Schwartz further fails to teach or suggest user definition of a search filter selected from the displayed defined list of category descriptions, as that term is now defined in the claims (see claim 4).

Accordingly, Schwartz does not anticipate any of the claims as amended.

The Cochran Reference

Cochran essentially teaches a "query by example" system in which a user can build a query for a database by selecting values from display fields. Search terms are grouped in a plurality of lists and each list represents a "category" (not defined in the same manner as Applicants' "category descriptions") or field in a record in the database (col. 2, lines 55-59). Lists are classified as fixed or static lists, and dynamic or variable lists. Static lists have a set or fixed number of terms therein and are derived from expected items in the database. Dynamic lists are made by obtaining data fields from each record in the database wherein the fields correspond to the category selected by the user. The data fields are treated as search terms and the terms are displayed and selected by the user by means of scrolling and select controls (col. 3, lines 28-49). Importantly, static lists anticipate all choices even if there are no records that satisfy the choice at the time the list is constructed (col. 10, lines 44-46). On the other hand, while dynamic lists present only terms that have at least one corresponding record, dynamic lists are derived (and freshened) by actually searching the database dynamically to generate a list of all current terms in a particular field of the database. As noted by Cochran, the search time to develop a dynamic list may be lengthy.

As with Schwartz, Cochran is simply a variation of conventional hierarchical file systems, in which fields/categories are defined in a first step, and values associated with data files are entered into such fields/categories in a second step. Cochran makes such a system easier to use by providing a "query by example" system to ease the task of defining queries, and static lists to speed up searches. However, nowhere

does Cochran teach or suggest categorization of a file by defining a list of category descriptions (as defined in the claims and described above), associating one or more such category descriptions with a file, and storing a file record containing file identity information, file location information, and the associated category description(s) for the file.

Moreover, Cochran fails to teach or suggest disabling the selectability of displayed category descriptions that would not provide a logical match to the category descriptions of the defined search filter (claim 2) or searching stored file records, comprising at least a file name, file location information and at least one associated category description for the selected file, for logical matches to the descriptions of the defined search filter (claim 3).

Accordingly, Cochran neither does not anticipate the invention set forth in claims 2 and 3, as amended.

The arguments with respect to claims 1, 2, 3, and 4 apply equally to the corresponding claims 21, 22, 23, and 24, and the claims dependent from claims 1-4 and 21-24.

The Thought Pattern Handbook Reference

With respect to claims 27-29, Applicants have amended claim 27, and thus the claims dependent thereon, to recite the definition of "category description". There is no teaching or suggestion in the Thought Pattern Handbook reference to provide the function of the category descriptions, let alone the category linking means. Accordingly, Applicants submit that claim 27, and the claims dependent thereon, are not anticipated by the Thought Pattern Handbook reference.

Section 103 Rejection

Since none of the references teach or suggest the concept of category descriptions, as discussed above, the various combination of references cannot supply this missing element of the claims. Accordingly, Applicants submit that none of the references, alone or in combination, anticipate or make obvious the invention as presently claimed.

Conclusion

Applicants request entry of the claims as amended on the grounds that they are in better form for consideration on appeal. In the alternative, Applicants submit that this case is now in condition for allowance, and therefore respectfully request reconsideration and reexamination of the present application, and allowance of the case at an early date.

Respectfully submitted,

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